EXAMINER'S AMENDMENT

1.   An examiner's amendment to the record appears below. Should the changes and/or

additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR

1.312. To ensure consideration of such an amendment, it MUST be submitted no later than the

payment of the issue fee.

The following is the set of claims with examiner's amendments:

Listing of Claims:

1.   (Currently Amended) In a computing environment, a system comprising:

a computer processor;

computer system memory;

a first component comprising a tree of clocks hierarchically related by synchronization

rules and primitives, an event list generator, an interval generator, and a high-level timing

component,

wherein the clocks correspond to clock properties received from an application

program,

wherein the event list generator comprises a state machine and groups events

initially scheduled by specified clock properties together with explicit interactive events

received with respect to an animation into an event list,

wherein the states of the state machine comprise inactive, active, pause, and

resume, and

wherein the interval generator uses the event list to compute a corresponding

interval list;

a second component comprising a low-level timing component and a low-level computation engine,

> wherein the second component receives the interval list from the first component,

> wherein the low-level component interpolates parameter intervals to obtain instantaneous values and decodes instructions into rendering commands to be executed by a graphics device, and

> wherein the low-level computation engine controls output based on current time and interpolates the location of an animated object based on interval data and current time;

a system clock which provides consistent time to both the high-level timing component and the low-level timing component and enabling the first component and the second component to remain in synchronization; and

an animation function subsystem that determines a current value for a varying property of an animated object.

2.   (Original) The system of claim 1 wherein the output corresponds to a progress of an animation having an animated characteristic.

3.   (Original) The system of claim 1 wherein the second component determines the output by interpolating a current progress value for the animated characteristic.

4.   (Original) The system of claim 1 wherein the second component computes the output at a fast operating rate relative to an operating rate of the first component.

5.   (Previously Presented) The system of claim 1, wherein the interval generator computes the interval data from an event list provided by the event list generator , the event list based on the clock data.

6.   (Previously Presented) The system of claim 5 wherein the first component receives an interactive event, and wherein the event list generator further adds the interactive event into the event list.

7.   (Previously Presented) The system of claim 6 wherein the event list generator further adds at least one implicit event into the event list.

8.   (Previously Presented) The system of claim 6 wherein the event list generator marks at least one event in the event list as unused, the interval generation mechanism not using an unused event in computing the interval data.

9.   (Original) The system of claim 1 wherein the clock data comprises property information corresponding to a begin time value and a duration.

10.   (Original) The system of claim 1 wherein the clock data comprises property information corresponding to a repeat count.

11.   (Original) The system of claim 1 wherein the clock data comprises property information corresponding to a reverse instruction.

12.   (Original) The system of claim 1 wherein the clock data comprises property information corresponding to acceleration data.

13.   (Original) The system of claim 1 wherein the clock data comprises property information corresponding to deceleration data.

14.   (Original) The system of claim 1 wherein the clock data comprises property information corresponding to a seek instruction.

15.   (Original) The system of claim 1 wherein the clock data comprises property information corresponding to speed data.

16.   (Original) The system of claim 1 wherein the clock data comprises property information corresponding to function data.

17.   (Original) The system of claim 1 wherein the first component and second component execute on different threads.

18.   (Currently Amended) In a computing environment comprising a computer processor and computer system memory, a method comprising:
a first component receiving clock data and graphics data, the first component comprising a tree of clocks hierarchically related by synchronization rules and primitives, an event list generator, an interval generator, and a high-level timing component, and wherein the clocks correspond to clock properties received from an application program;

the event list generator grouping together explicit interactive events with events initially scheduled by specified clock properties;

the event list generator walking a combined list of scheduled and interactive events and inserting implicit events;

the event list generator generating an event list from clock properties and interactive events, wherein the event list generator comprises a state machine and groups events initially scheduled by specified clock properties together with explicit interactive events received with respect to an animation into the event list and wherein the states of the state machine comprise inactive, active, pause, and resume;

pairing off events to form intervals, wherein there is an interval for every pair of consecutive events;

an interval generator generating an interval list from the event list and the clock data;

a second component receiving the interval list, the second component comprising a low-level timing component and a low-level computation engine;

the second component interpolating the location of an animated object based on interval data and current time to obtain instantaneous values and the second component also controlling output based on current time and decoding instructions into rendering commands to be executed by a graphics device;

the second component providing a progress value to a low-level animation subsystem;

the low-level animation subsystem determining a current value for a varying property of an animated object;

receiving a consistent time from a system clock at both the high-level timing component and the low-level timing component for enabling the first component and the second component to remain in synchronization; and

using an animation function subsystem to determine a current value for a varying property of the animated object.

19.   (Original) The method of claim 18 wherein causing output to be produced based on the current time data and the interval data comprises, determining an interval, and determining a progress value within that interval.

20.   (Original) The method of claim 19 further comprising, causing an animation property value to be determined based on the progress value, such that the animation property value varies as the current time varies.

21.   (Original) The method of claim 18 wherein generating interval data based on the clock data includes, building an event list based on the clock data, and processing the event list to generate the interval data.

22.   (Original) The method of claim 21 further comprising receiving an interactive event, and further comprising, building a modified event list based on the clock data and the interactive event.

23.   (Original) The method of claim 22 wherein building a modified event list comprises adding an implicit event based on the interactive event.

24.   (Original) The method of claim 22 further comprising, marking an event as unused based on the interactive event.

25.   (Original) The method of claim 18 wherein causing output to be produced based on current time data and the interval data comprises constructing a frame at a rate that corresponds to a frame refresh rate of a graphics subsystem.

26.   (Cancelled)

27.   (Currently Amended) A computer-readable storage medium having encoded thereon stored computer-executable instructions for performing the method of claim 18.

Deleted: computer program product comprising a

28.   (Cancelled).

29 – 36   (Cancelled)

Authorization for this examiner's amendment was given in a telephone interview with

Jens Jenkins on 3/25/2008.

Allowable Subject Matter

Claims 1-25 and 27 are allowed.

The following is an examiner's statement of reasons for allowance: the cited prior art does not

disclose or render obvious the combination of elements recited in the claims as whole.

Specifically, the cited prior art fails to disclose or render obvious the following limitations:

As per independent claim 1, the claimed:

initially scheduled by specified clock properties together with explicit interactive events received

with respect to an animation into an event list,

wherein the second component receives the interval list from the first component, wherein the

low-level component interpolates parameter intervals to obtain instantaneous values and decodes

instructions into rendering commands to be executed by a graphics device, and

low-level timing component and enabling the first component and the second component to

remain in synchronization.

As per independent claim 18, this claim is also allowed for the same reasons as independent

claim 1.

Any comments considered necessary by applicant must be submitted no later than the payment

of the issue fee and, to avoid processing delays, should preferably accompany the issue fee.

Such submissions should be clearly labeled "Comments on Statement of Reasons for

Allowance."

Conclusion

Any inquiry concerning this communication or earlier communications from the

examiner should be directed to Daniel F. Hajnik whose telephone number is (571) 272-7642.

The examiner can normally be reached on Mon-Fri (8:30A-5:00P).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's

supervisor, Ulka J. Chauhan can be reached on (571) 272-7782. The fax phone number for the

organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent

Application Information Retrieval (PAIR) system. Status information for published applications

may be obtained from either Private PAIR or Public PAIR. Status information for unpublished

applications is available through Private PAIR only. For more information about the PAIR

system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR

system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would

like assistance from a USPTO Customer Service Representative or access to the automated

information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

DFH

/Ulka Chauhan/

Supervisory Patent Examiner, Art Unit 2628